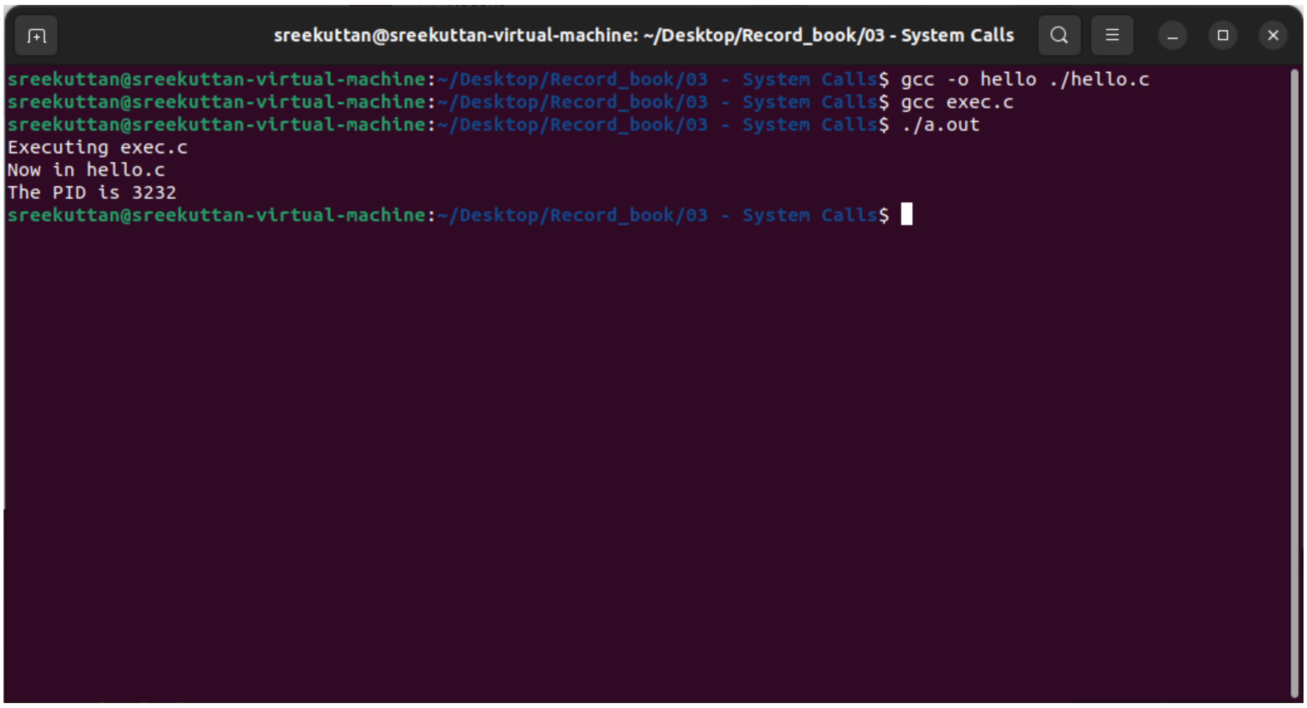
PROGRAM

```c
//exec.c
#include<stdio.h>
#include<unistd.h>
void main(){
	printf("Executing exec.c\n");
	char *args[]={"./hello",NULL};
	execv(args[0],args);
	printf("This line will not be executed");
}
//hello.c
#include<stdio.h>
#include<unistd.h>
void main(){
	printf("Now in hello.c\n");
	printf("The PID is %d\n",getpid());
}
```

OUTPUT



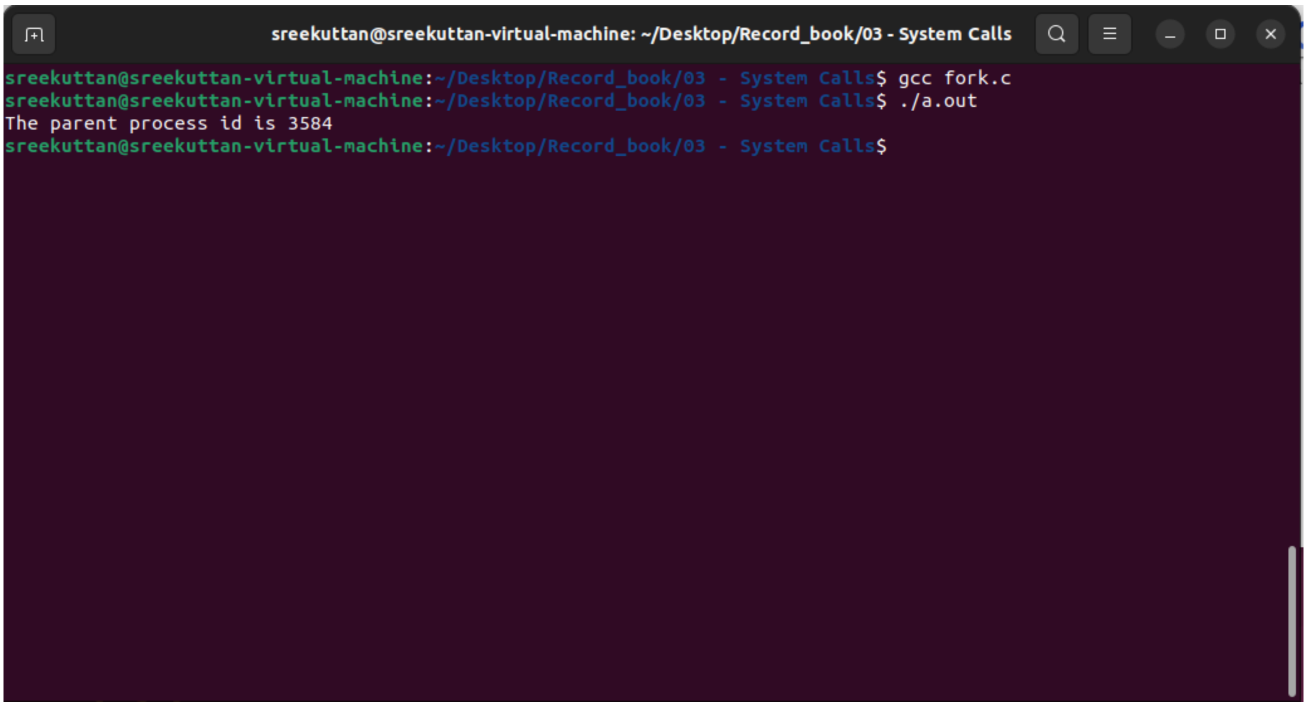
sreekuttan@sreekuttan-virtual-machine: ~/Desktop/Record_book/03 - System Calls

```
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ gcc -o hello ./hello.c
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ gcc exec.c
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ ./a.out
Executing exec.c
Now in hello.c
The PID is 3232
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$
```

PROGRAM

```
//fork
#include <stdio.h>
#include <unistd.h>
int main(){
	int pid,pid1,pid2;
	pid=fork();
	if(pid == 1){
		printf("Error in process \n");
	}
	if(pid !=0){
		pid1=getpid();
		printf("The parent process id is %d\n",pid1);
	}
}
```

OUTPUT



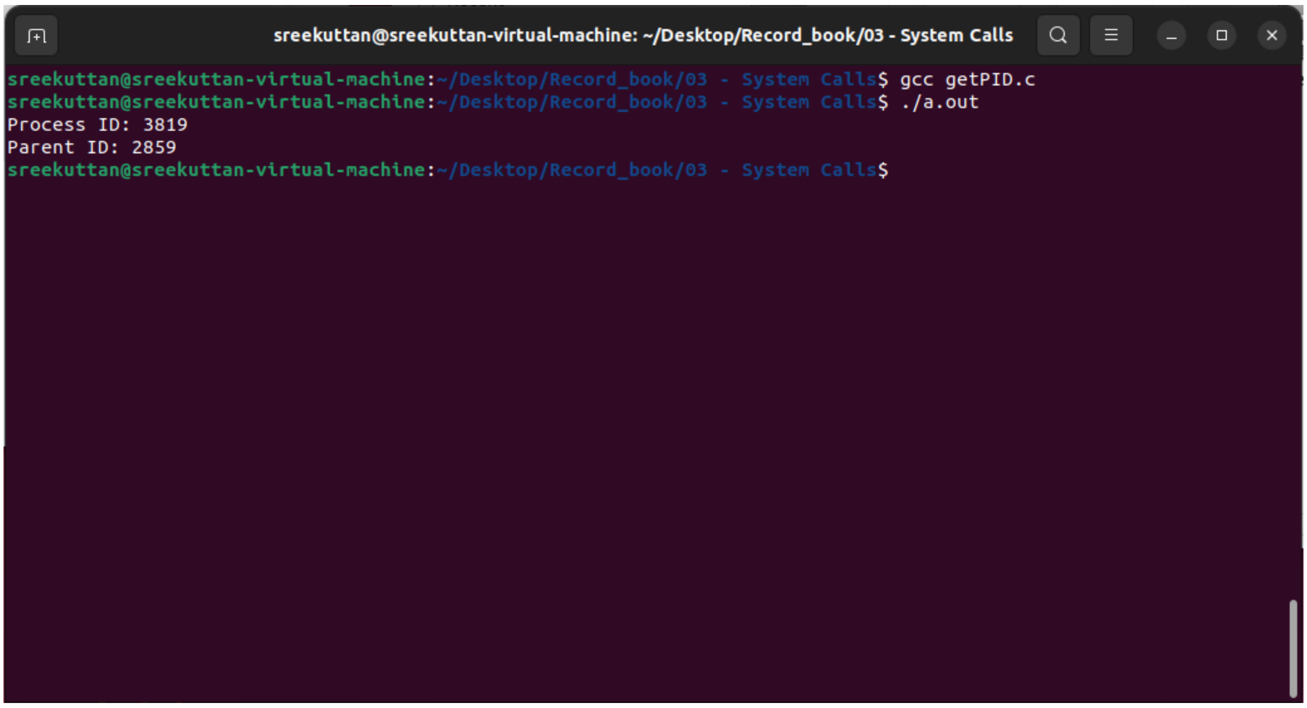
sreekuttan@sreekuttan-virtual-machine: ~/Desktop/Record_book/03 - System Calls

```
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ gcc fork.c
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ ./a.out
The parent process id is 3584
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$
```

PROGRAM

```
//getPID
#include <stdio.h>
#include <unistd.h>
int main() {
	int pid, ppid;
	pid = getpid();
	ppid = getppid();
	printf("Process ID: %d\n", pid);
	printf("Parent ID: %d\n", ppid);
	return 0;
}
```

OUTPUT



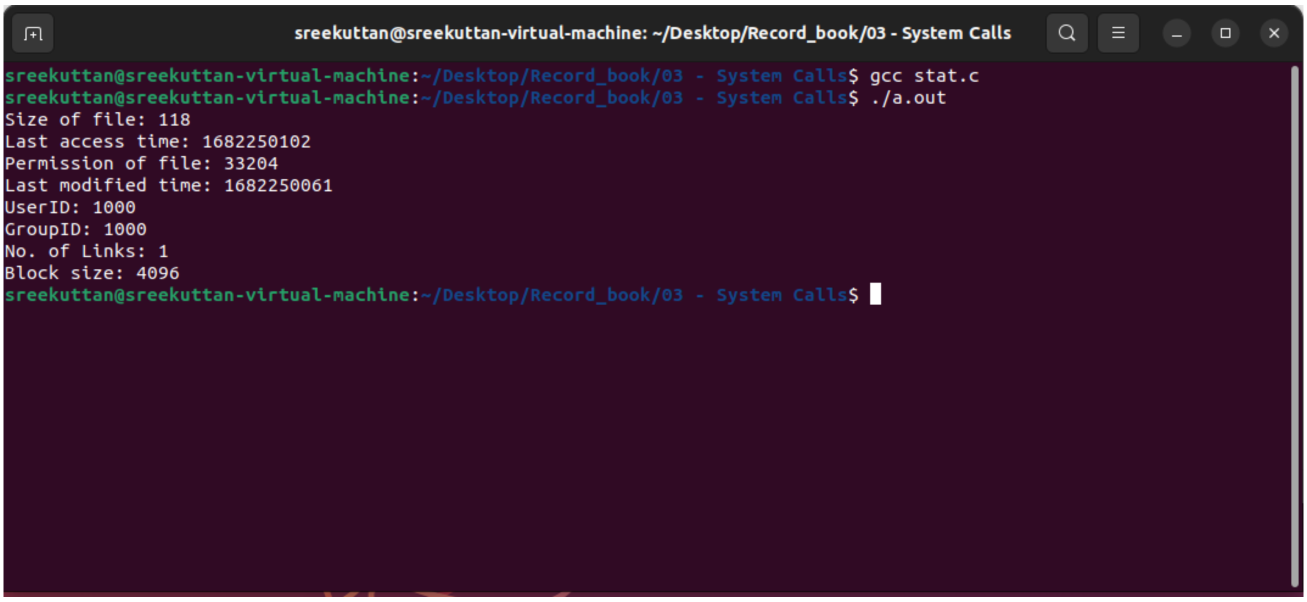
sreekuttan@sreekuttan-virtual-machine: ~/Desktop/Record_book/03 - System Calls

```
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ gcc getPID.c
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ ./a.out
Process ID: 3819
Parent ID: 2859
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$
```

PROGRAM

```c
//stat
#include <stdio.h>
#include <sys/stat.h>
int main() {
	struct stat nfile;
	stat("hello.c",&nfile);
	printf("Size of file: %ld\n", nfile.st_size);
	printf("Last access time: %ld\n", nfile.st_atime);
	printf("Permission of file: %d\n", nfile.st_mode);
	printf("Last modified time: %ld\n", nfile.st_mtime);
	printf("UserID: %u\n", nfile.st_uid);
	printf("GroupID: %d\n", nfile.st_gid);
	printf("No. of Links: %ld\n", nfile.st_nlink);
	printf("Block size: %ld\n", nfile.st_blksize);
	return 0;
}
```

OUTPUT

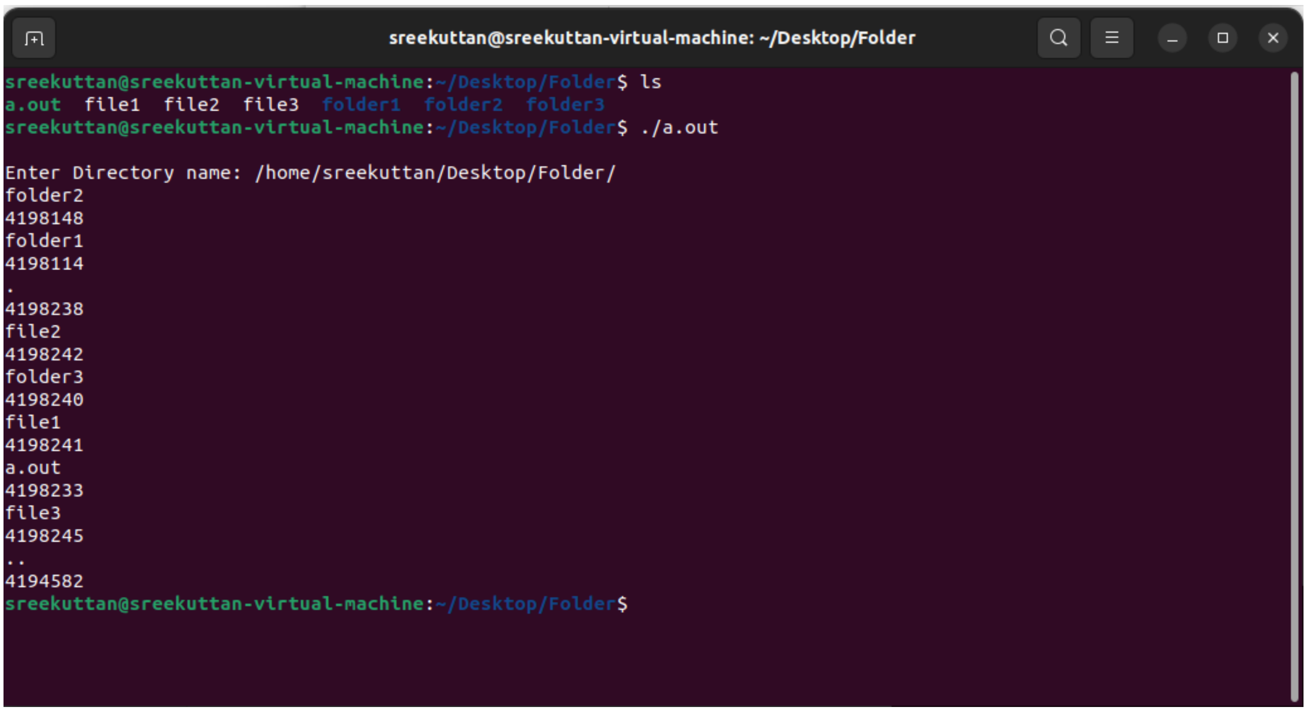

sreekuttan@sreekuttan-virtual-machine: ~/Desktop/Record_book/03 - System Calls

```
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ gcc stat.c
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ ./a.out
Size of file: 118
Last access time: 1682250102
Permission of file: 33204
Last modified time: 1682250061
UserID: 1000
GroupID: 1000
No. of Links: 1
Block size: 4096
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$
```

PROGRAM

```
//opendir readdir
#include <stdio.h>
#include <stdlib.h>
#include <dirent.h>
struct dirent *dptr;
int main(int argc, char *argv[]) {
	char buff[100];
	DIR *dirp;
	printf("\n\nEnter Directory name: ");
	scanf("%s", buff);
	if ((dirp = opendir(buff)) == NULL) {
		printf("The given directory doesn't exist");
		exit(1);
	}
	while (dptr = readdir(dirp)) {
		printf("%s\n", dptr->d_name);
		printf("%d\n", dptr->d_ino);
	}
	closedir(dirp);
}
```

OUTPUT



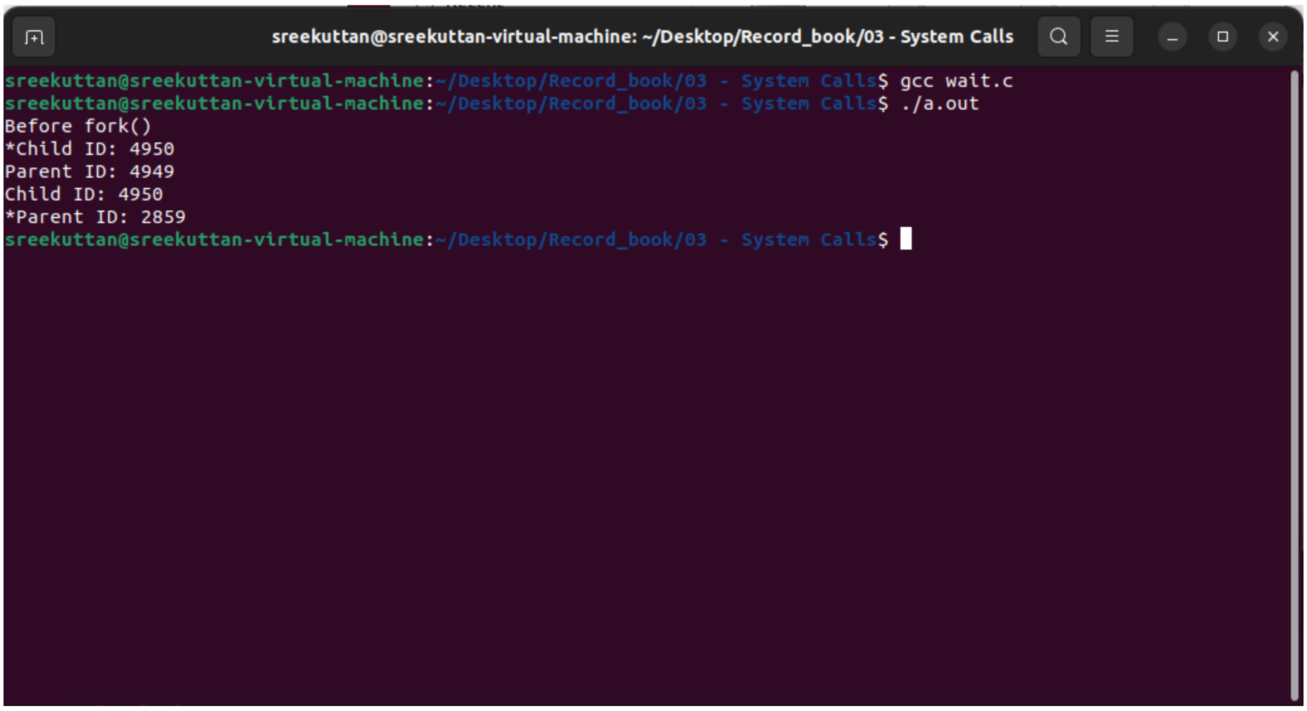
```
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Folder$ ls
a.out  file1  file2  file3  folder1  folder2  folder3
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Folder$ ./a.out

Enter Directory name: /home/sreekuttan/Desktop/Folder/
folder2
4198148
folder1
4198114
.
4198238
file2
4198242
folder3
4198240
file1
4198241
a.out
4198233
file3
4198245
..
4194582
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Folder$
```

PROGRAM

```
//wait
#include <stdio.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/wait.h>
int main() {
	pid_t p;
	printf("Before fork()\n");
	p = fork();
	if (p == 0) {
		printf("*Child ID: %d\n", getpid());
		printf("Parent ID: %d\n", getppid());
	}
	else {
		wait(NULL);
		printf("Child ID: %d\n", p);
		printf("*Parent ID: %d\n", getppid());
	}
	return 0;
}
```

OUTPUT



sreekuttan@sreekuttan-virtual-machine: ~/Desktop/Record_book/03 - System Calls

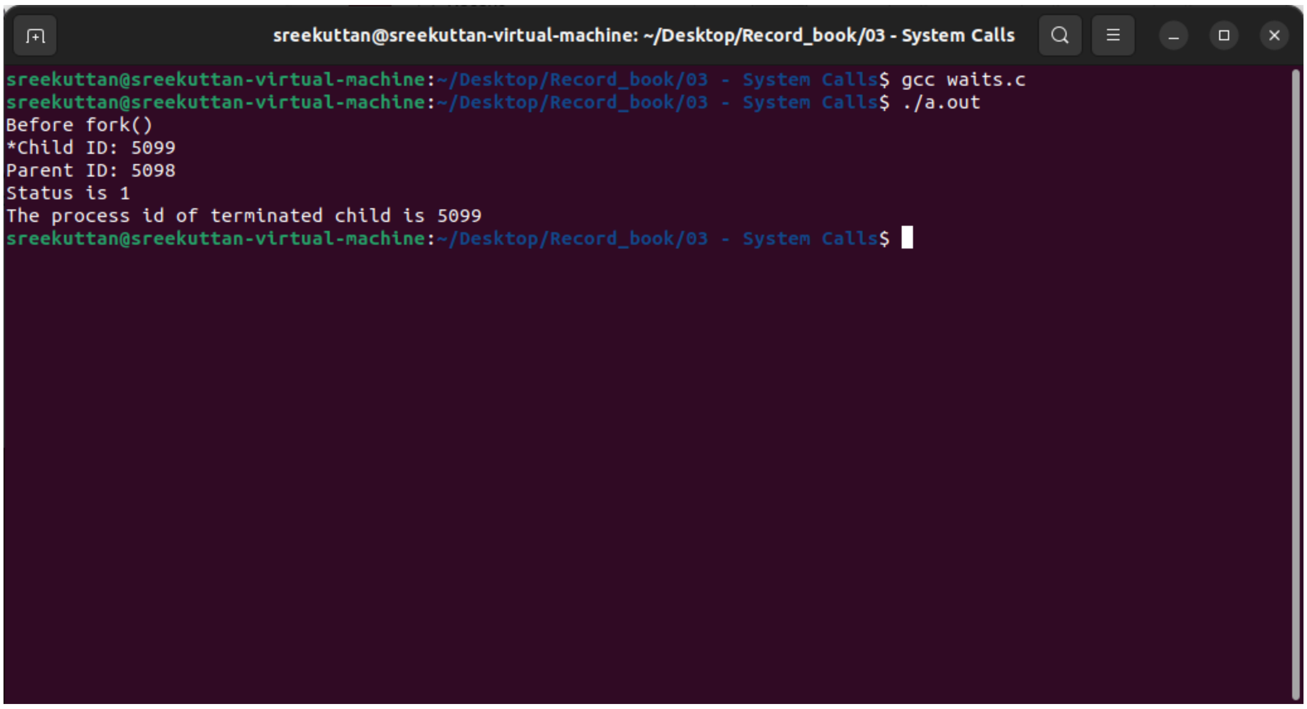
```
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ gcc wait.c
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ ./a.out
Before fork()
*Child ID: 4950
Parent ID: 4949
Child ID: 4950
*Parent ID: 2859
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ 
```

PROGRAM

```c
//waits
#include <stdio.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/wait.h>
int main() {
	pid_t p;

	printf("Before fork()\n");
	p = fork();
	if (p == 0) {
		printf("*Child ID: %d\n", getpid());
		printf("Parent ID: %d\n", getppid());
	}
	else {
		//w=wait(NULL);
		int wstatus;
		int w1 = wait(&wstatus);
		printf("Status is %d \n",WIFEXITED(wstatus));
		printf("The process id of terminated child is %d\n",w1);
	}
	return 0;
}
```

OUTPUT



sreekuttan@sreekuttan-virtual-machine: ~/Desktop/Record_book/03 - System Calls

```
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ gcc waits.c
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$ ./a.out
Before fork()
*Child ID: 5099
Parent ID: 5098
Status is 1
The process id of terminated child is 5099
sreekuttan@sreekuttan-virtual-machine:~/Desktop/Record_book/03 - System Calls$
```